



# UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE  
United States Patent and Trademark Office  
Address: COMMISSIONER FOR PATENTS  
P.O. Box 1450  
Alexandria, Virginia 22313-1450  
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/801,546	03/17/2004	Wataru Sotoyama	042122	2320

38834 7590 05/15/2006

WESTERMAN, HATTORI, DANIELS & ADRIAN, LLP  
1250 CONNECTICUT AVENUE, NW  
SUITE 700  
WASHINGTON, DC 20036

EXAMINER

THOMPSON, CAMIE S

ART UNIT	PAPER NUMBER
----------	--------------

1774

DATE MAILED: 05/15/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

**Office Action Summary**

Application No.

10/801,546

Applicant(s)

SOTOYAMA, WATARU

Examiner

Camie S. Thompson

Art Unit

1774

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on Amendment filed 3/1/06.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1,2,4,5 and 8-36 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-2, 4-5 and 8-36 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |  |   |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892)   | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                                   | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)             |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____  |

### DETAILED ACTION

1. Applicant's amendment and accompanying remarks filed March 1, 2006 have been acknowledged.
2. Examiner acknowledges amended claims 1, 4-5, 8 and 10.
3. Examiner acknowledges cancelled claims 3 and 6-7.
4. The rejection of claims 1-2, 4 and 11-12 under 35 U.S.C. 102(e) as being anticipated by Toguichi et al., U.S. Patent Number 6,753,097 is withdrawn due to applicant's argument.

### *Claim Rejections - 35 USC § 102*

5. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

6. Claims 1 is rejected under 35 U.S.C. 102(e) as being anticipated by Toguchi et al., U.S. Patent Number 6,747,287.

Toguchi discloses an organic thin film, which includes a compound represented by



wherein Ar<sup>1</sup> and Ar<sup>2</sup> are selected from unsubstituted or substituted aromatic

hydrocarbon groups having 6 to 20 carbon atoms; X is selected from unsubstituted or substituted

Art Unit: 1774

condensed aromatic hydrocarbon groups having 6 to 34 carbon atoms such as chrysene and n is 1-4. The reference reads on the instant claims when X is chrysene or pyrene (C<sub>22</sub> condensed aromatic structure); Ar<sup>1</sup> and Ar<sup>2</sup> are substituted aromatic hydrocarbon groups that can include phenyl groups, naphthyl groups and anthryl groups as per the instant claims (see column 3, line 33-column 5, line 60). Additionally, the reference discloses that the organic thin film can consist of a mixture of the above compound when the substituents for each compound are different (see column 3, lines 60-61).

### *Claim Rejections - 35 USC § 103*

7. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

8. Claims 1 and 14-36 are rejected under 35 U.S.C. 103(a) as being unpatentable over Toguchi et al., U.S. Patent Number 6,747,287 in view of Ohashi et al., U.S. Patent Number 5,200,668.

Toguchi discloses an organic thin film, which includes a compound represented by



wherein Ar<sup>1</sup> and Ar<sup>2</sup> are selected from unsubstituted or substituted aromatic hydrocarbon groups having 6 to 20 carbon atoms; X is selected from unsubstituted or substituted

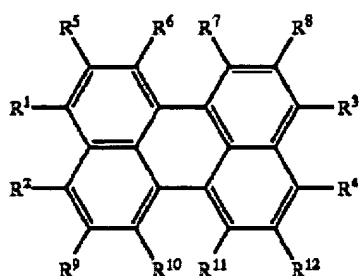
Art Unit: 1774

condensed aromatic hydrocarbon groups having 6 to 34 carbon atoms such as chrysene and n is 1-4. The reference reads on the instant claims when X is chrysene ( $C_{22}$  condensed aromatic structure);  $Ar^1$  and  $Ar^2$  are substituted aromatic hydrocarbon groups that can include phenyl groups, naphthyl groups and anthryl groups as per the instant claims (see column 3, line 33-column 5, line 60). Additionally, the reference discloses that the organic thin film can consist of a mixture of the above compound when the substituents for each compound are different (see column 3, lines 60-61). Toguchi does not disclose that the organic thin film is used for a luminescence element. Ohashi discloses a luminescence element that comprises two electrodes with an organic thin film layer sandwiched therebetween (see column 2, lines 35-68). Column 3, lines 50-68 of the Ohashi reference discloses a mixture of organic compounds used in the organic thin layer can be condensed polycyclic aromatic hydrocarbons and compounds having a quinone structure forming a complex in an excited state such as aluminum hydroxyquinoline. Condensed polycyclic aromatic hydrocarbons and quinone structures having a complex in the excited state have high luminescence quantum efficiency (see Ohashi, column 3, lines 45-49). Therefore, it would have been obvious to one of ordinary skill in the art to have the Toguchi reference have a mixture of  $X-[Ar^1Ar^2]_n$  wherein X is chrysene or pyrene, n is 4 and  $Ar^1$  and  $Ar^2$  are substituted aromatic hydrocarbon groups and aluminum hydroxyquinoline in order to have a luminescent element that has high luminance and high stability.

9. Claims 1-2, 4-5 and 8-13 are rejected under 35 U.S.C. 103(a) as being unpatentable over Toguchi et al., U.S. Patent Number 6,753,097.

Art Unit: 1774

Toguchi discloses an electroluminescence device that includes an anode, a cathode and at least one organic layer sandwiched between the anode and the cathode. Additionally, the reference discloses that the organic layer includes a light-emitting layer, which includes compound C1,



wherein R<sup>1</sup> to R<sup>4</sup> each independently represents a substituted alkenyl group or hydrogen (see column 3, lines 13-40). It is disclosed in column 5, lines 3-7 of the reference that an aryl group having a styryl group as a substituent provide light emission with a higher brightness. The Toguchi reference does not specifically disclose the aryl group is a diarylamino group. Aryl is generic. Therefore, it would have been obvious to one of ordinary skill in the art to have the aryl groups be substituted or unsubstituted phenyl or naphthyl groups as they are species are encompassed with the generic group of aryl compounds.

### *Response to Arguments*

10. Applicant's arguments filed March 1, 2006 have been fully considered but they are not persuasive. Applicant argues that the Toguchi reference 6,753,097 reference does not disclose a substituted styryl group substituted by a diarylamino group. The '097 reference does disclose

Art Unit: 1774

that the perylene compound can have an aryl group with a styryl group as a substituent. Aryl is generic and would encompass diarylamino. Examiner has agreed to withdraw the 35 U.S.C. 102(e) using the Toguchi '097 reference and instead rejected the claims under 103(a). Applicant argues tht the Toguchi reference 6,747,287 does not disclose a perylene compound substituted by two or more styryl groups each substituted by a diarylamino group. However, the '287 reference does read on instant claim 1 wherein X is a condensed aromatic ring such as chrysene or perylene and n is 4 (column 2, lines 30-60). Therefore, claim 1 is rejected under 35 U.S.C. 102(e) as being anticipated by Toguchi '287. The rejections are maintained.

11. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).


A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communication from the examiner should be directed to Camie S. Thompson whose telephone number is (571) 272-1530. The examiner can normally be reached on Monday through Friday from 7:30 am to 4:00 pm. If

Art Unit: 1774

attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Rena L Dye, can be reached at (571) 272-3186. The fax phone number for the Group is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

  
RENA DYE  
SUPERVISORY PATENT EXAMINER  
A.U. 1774 6/10/04